

REMARKS

The Examiner is thanked for the thorough examination of the above-referenced application. The Office Action, however, has tentatively rejected all claims. In this regard, claims 1-3, 7, 9-10, and 13 are tentatively rejected as allegedly anticipated by U.S. Patent 5,923,307 to Hogle, IV (hereafter Hogle). Claims 4-5, 8, and 11-12 have been tentatively rejected as allegedly obvious over the combination of the '307 patent and U.S. Patent 5,748,189 to Trueblood (hereafter Trueblood). Applicants have made slight amendments to claims 1 and 9, and Applicants have added new claim 14. For at least the reasons set forth herein, Applicants submit that all pending claims are in condition for allowance and that the rejections be withdrawn.

A Fundamental Distinction of Applicants' Claims

Specific rejections set forth in the Office Action, Applicants note a fundamental distinction described in various embodiments of the present application over the disclosure and teachings of the cited references. Specifically, this fundamental distinction relates to the management of "context" data from a system memory to the display hardware associated with multiple displays that are configured to present a single logical display to a user. In embodiments of the present invention, this context data is managed such that it is communicated to the display hardware of only a single display, rather than being communicated to the display hardware of each of the implicated displays. The management of this context data of one embodiment of the present application is described in the present specification, beginning at page 13, line 22 and extending through page 15, line 10. For the Examiner's convenience, this portion of the specification has been reproduced immediately below.

The preferred embodiment realizes performance and efficiency advantages over prior systems in certain operational scenarios. In this regard, it is understood that a device driver 620 is operational at any given time to drive the display hardware of only a single display. Therefore, as a window (visible to a user) is split or shared among two or more displays, not all of the window information will be updated through the system of the preferred embodiment. Instead, the preferred embodiment is designed to associate the device driver 620 with the display hardware 606 or 608 that is associated with the display that contains the majority of a window (associated with the given context information). As a user or other controlling entity causes the window to move or be resized such that a majority of the window shifts from a first display to a second display, then the preferred embodiment swaps the context information and begins rendering to the appropriate display hardware.

To illustrate this concept, reference is made briefly to FIGS. 7A and 7B, which illustrate the movement of a window 750 in a direction from display 604 to display 602. As illustrated in FIG. 7A, the majority of the window 750 occupies display 604, while only a minority portion of the window 750, illustrated in dash lines in display 602, occupies a portion of the display 602. Assume further, for purposes of this example, that context 2 is the controlling context state for the window 750. When the window is positioned as illustrated in FIG. 7A, the device driver 620 ensures that context 2 information is active within the display hardware 608 (which controls display 604). As a user, or other controlling entity, moves the window 750 in the direction of display 602, at some point the majority of the window 750 occupies display 602 (as shown in FIG. 7B). As soon as the majority of the window 750 moves from display 604 to display 602, the device driver 620 operates to direct context 2 information into the display hardware 606 associated with the display 602. Thereafter, the device driver 620 no longer controls the display of that portion of the window 750 residing in display 604. One option would simply be to allow the display to go black in that area. Another option may be to allow the display hardware 608 to fill that area with the background color of the window 750. Yet another option may simply be to implement no control over the information that is displayed in that portion of the display 604.

While it may be recognized that an implementation of this type may result in an esthetically unpleasing presentation, or undesired visual results, it provides a much simplified and streamlined hardware implementation and methodology. Furthermore, it has been recognized that, in most applications, users do not control the display of a window to span multiple displays. Instead, users typically isolate different windows onto different displays such that the potential adverse visual effects are simply not present in most practical applications. Therefore, the architecture of the preferred embodiment provides a desirable alternative for most practical implementations.

This concept, which is embodied in the claims, as discussed below, is simply not disclosed or taught in the cited art of record.

This is clearly evidenced in claim 3, which further define the system of claim 2 stating that “the mechanism configured to direct context data operates...such that the context data is directed from the memory to the display containing the majority of the window.” The Office Action cited FIG’s. 16a-c of *Hogle* as teaching this feature. In this regard, the Office Action alleged that “USER picked monitor 2 or display of window A because, as shown in FIG. 16(a) it contained a larger portion of window A than did monitor 1 just prior to the geometry change.” (Citing column 17, lines 9-26.) In fact, the cited portion (column 17, lines 9-26) of *Hogle* actually states:

Another example situation in which the USER reconfiguration code dynamically repositions windows in response to a geometry change is shown in FIGS. 16(a)-16(c). In FIG. 16(a), window A is positioned such that it straddles the boundary between the two monitor spaces corresponding to monitors #1 and #2. In FIG. 16(b), the end-user has physically placed monitor #2 on top of monitor #1 such that the two portions of window A are no longer adjacent. When the end-user interacts with the monitor positioning window to tell USER about the geometry change, ***the USER reconfiguration code automatically repositions window A so that it appears entirely within a single monitor space as shown in FIG. 16(c).*** USER picks the monitor space based on the relative amounts of window area that appeared in each monitor space prior to the geometry change. In the example shown, USER picked the monitor #2 for display of window A because, as shown in FIG. 16(a), it contained a larger portion of window A than did monitor #1 just prior to the geometry change.

As is specifically taught in the *Hogle* reference (emphasized above), under certain circumstances, certain configuration code may operate to automatically reposition a window (that otherwise straddles a boundary between the displays) so that it appears entirely within a single monitor space. This is a significantly different teaching than the claimed feature of directing context data to the display hardware of the display, which contains the majority of the window. Specifically, the window of the present invention is not repositioned.

Any Ensuing Office Action should be Made Non-Final

Applicants respectfully submit that, based at least upon this fundamental distinction (which was not properly recognized by the Office Action), should any ensuing Office Action be mailed that continues to reject the claims based on a revised application of the cited art (or based on new art), any such rejection should be made non-final. In this regard, any such rejections would be based on new issues that were not necessitated by any amendments made herein.

Discussion of Rejection of Claims 1-8

Turning now to the specific claim rejections, the Office Action rejected independent claim 1 as allegedly anticipated by the teachings of *Hogle*. For the reasons set forth below, Applicants respectfully traverse this rejection and request that the rejection be withdrawn. Claim 1 recites:

1. A system for managing context information in a graphics system having multiple displays configured as a single logical screen (SLS) comprising:
 - a single device driver coupled to directly communicate with display hardware of at least two displays;
 - a graphics API (application program interface) for communicating graphics information to the single device driver;
 - a memory configured to store context information, the memory in communication with the single device driver; and
 - a mechanism configured to direct context data from the memory to the display hardware of only one of the displays.***

(*Emphasis added*). Independent claim 1 patently defines over the cited reference for at least the reason that the cited reference fails to disclose the features emphasized (***in bold and italics***) above.

Independent claim 1 defines, among other features, “a mechanism configured to direct context data from the memory to the display hardware of only one of the displays.”

Applicants amended claim 1 to clarify that the context data is direct to only one of the displays (although Applicants submit that this express limitation was implied in the originally-filed claims). Simply stated, there is no such teaching anywhere in the *Hogle* reference. In fact, the Office Action has not even specifically alleged such a feature to be taught or disclosed in *Hogle*. In this regard, the Office Action (last sentence on page 2) states only that “it is implied that user 33 includes a memory for storing context information corresponding to each individual monitor in order to display the correct information.”

Even assuming, *arguendo*, that this statement is true, the Office Action has failed to allege any teaching within the *Hogle* reference that context data is directed from memory to the display hardware of only one of the displays. For at least this reason, independent claim 1 patently defines over the cited art. Dependent claims 2-8 define over the cited art for at least the same reason as independent claim 1, and therefore the rejection of these claims should be withdrawn.

In addition, with regard to claims 4-5 and 8, the Office Action rejected these claims as allegedly obvious over the combination of *Hogle* and *Trueblood*. Among other reasons for traversing these rejections, Applicants traverse the alleged motivation for combining the *Hogle* and *Trueblood* references. In combining the two references, the Office Action alleged only that “it would have been obvious...in order to allow the use of a single keyboard and/or mouse in conjunction with a wide array of display terminals manufactured by different manufacturers without customization of the X-server software for the driving the display terminals.” Even assuming this allegation to be true, this has nothing whatsoever to do with the management of context data among the display hardware for the plurality of displays,

much less the communication of the context data to the display hardware of only one of the displays. As such, the combination of *Hogle* and *Trueblood*, in the context of the presently claimed invention is misplaced and should be withdrawn.

Discussion of Rejection of Claims 9-12

With regard to claims 9-12, the Office Action rejected independent claim 9 as allegedly anticipated by the teachings of *Hogle*. For reasons set forth herein, Applicants respectfully traverse this rejection and request that it be withdrawn. Independent claim 9 recites:

9. In a graphics system having multiple displays configured as a single logical screen (SLS), a method for managing context information comprising:
determining which one of the multiple displays that a majority of a window occupies;
directing context information from a memory into display hardware associated with only the display that a majority of the window occupies.

(*Emphasis added*). Applicants respectfully submit that independent claim 9 patently defines over the cited art for at least the reason that the cited art fails to teach the features emphasized (*in bold and italics*) above.

Similar to the distinguishing element discussed in connection with claim 1, claim 9 calls for “directing context information from the memory only into display hardware associated with the display that a majority of the window occupies.” Simply stated, this teaching is wholly lacking from the *Hogle* reference. Furthermore, the Office Action has not even alleged, with specificity, that this teaching is disclosed in the *Hogle* reference. Regrettably, the Office Action has largely rejected independent claims 1, 9, and 13 under a rejection set forth in a single paragraph. Although each of these claims is distinct, the Office Action has used essentially a single rejection to reject all three. With specific regard to

claim 9, the Office Action states (second full paragraph on page 3) “referring to claims 9 and 10, as cited above *Hogle* teaches a graphic system having multiple displays configured as a single logical screen, and a method for directing context data to the display which has the larger portion of window, and not communicating the context information to display hardware associated with the other displays (for example, monitor #1, FIG. 16(c)).”

Applicants respectfully disagree with this Application of *Hogle*. As set forth above in connection with the fundamental distinction, the cited teachings of *Hogle* do not refer to the communication of context data to only a single display hardware, but rather to the adaptation of the implementation such that the entire visible window is repositioned automatically within a single monitor space. This repositioning of the visible window is significantly different from the communication of context data to the display hardware of a single display.

For at least the foregoing reasons, claim 9 patently defines over the cited art of record. Claims 10-12, which depend from claim 9, patently define over the cited art for at least the same reasons.

Discussion of Rejection of Claim 13

Turning now to claim 13, the Office Action rejected claim 13 as allegedly anticipated by the teachings of *Hogle*. For the reasons set forth below, Applicants respectfully disagree and request that this rejection be withdrawn. Claim 13 recites:

13. A system for managing context information in a graphics system having multiple displays configured as a single logical screen (SLS) comprising:
- a single device driver coupled to communicate directly with display hardware of at least two displays; and
 - a graphics API (application program interface) for communicating graphics information directly to the single device driver, and without communicating the graphics information through an intervening process.***

(*Emphasis added*).

Applicants respectfully submit that claim 13 patently defines over the cited art for at least the reason that the cited art fails to disclose the features emphasized (*in bold and italics*) above.

Claim 13 defines a single device driver and a graphics API for communicating graphics information “directly from the single device driver, and without communicating the graphics information through an intervening process”. Simply stated, this feature is not disclosed in the *Hogle* reference. The Office Action states that “USER 33 is able to interact directly with the adapters device driver”. (Citing column 8, lines 8-10 of *Hogle*.) This portion of *Hogle* actually states “in some of the windows operating system products, USER is able to interact directly with the adapter’s driver.” The embodiment defined by claim 13 is best illustrated in FIG. 8, which shows an open GL API 610 in direct communication with a device driver 620. There is no such corresponding teaching anywhere in the *Hogle* reference, including the portions cited by the Office Action. The “USER” that is referenced in the *Hogle* patent is not an API as called for by claim 13. Instead, the USER referred to in the *Hogle* reference is an operating subsystem (see column 7, lines 65-66). Consequently, the application of *Hogle* to claim 13, as set forth in the Office Action, is misplaced and, correspondingly the rejection should be withdrawn.

Claim 14 is newly added, and depends from claim 3, and further defines an embodiment of the invention over the cited art of record.

CONCLUSION

In view of the foregoing, it is believed that all pending claims are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the

examination of the above-identified patent application, the Examiner is invited to call the undersigned.

No fee is believed to be due in connection with this Amendment and Response to Office Action. If, however, any fee is deemed to be payable, you are hereby authorized to charge any such fee to Hewlett-Packard Company's Deposit Account No. 80-2025.

Respectfully submitted,



Daniel R. McClure
Registration No. 38,962
(770) 933-9500

Please continue to send all future correspondence to:

Hewlett-Packard Development Company, L.P.
Intellectual Property Administration
P.O. Box 272400
Fort Collins, Colorado 80527-2400